

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
I	GEL	U24FTA101	TAMIL - I	60	3	25	75	100

OBJECTIVES

- தமிழ் மொழியின் பண்புகளை மாணவர் மனதில் பதிய வைத்தல் தாய்மொழியின் பழமை, சிறப்பு, விழுமியங்கள் ஆகியவற்றைக் கற்பித்தல். செவ்வியல் இலக்கியங்களை அறியச் செய்தல்
- தமிழில் உள்ள இலக்கிய வடிவங்களை அறிமுகப்படுத்தி படைப்பாக்கத்திற்கு துணை நிறுதல். இலக்கிய இலக்கணக் கற்றல் வழி போட்டித் தேர்வுகளுக்கு ஆயத்தப்படுத்தல்.

COURSE OUTCOME(S)

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	செவ்வியல் இலக்கிய நெடிய வரலாறு, இலக்கணப் பயிற்சி வழி போட்டித் தேர்வுகளை எதிர்கொள்ளல்.	K3
CO2	சமூகச் நிலைப்பாடு, பண்டைய அரச வரலாறு போன்றவற்றை விளக்கி, வாசிப்பையும் உச்சரிப்பையும் மேம்படுத்தி புரியவைத்தல்	K2
CO3	நீதி இலக்கியங்களின் வழி ஒழுக்க விழுமியங்களை வலியுறுத்தி அறவுரைகளை மேற்கொள்ளல்.	K3
CO4	காப்பிய மாந்தர்களின் வாழ்வியல் வழி தனி மனித மன உணர்வுகளை வெளிக் கொணரல்	K4
CO5	பக்தி இயக்க காலத்தில் சமூகப் பண்பாட்டு வரலாற்றை இனம் காணல்.	K2

அலகு - 1	இலக்கணம் & இலக்கிய வரலாறு அறிமுகம் 1. ஐந்திலக்கணம் - அறிமுகம் 2. சங்க இலக்கியங்கள் - எட்டுத்தொகை, பத்துப்பாட்டு 3. நீதி இலக்கியங்கள் 4. காப்பியங்கள் 5. பக்தி இலக்கியங்கள்	(12 Hours)
அலகு - 2	சங்க இலக்கியம் 1. நற்றிணை - 3 பாடல்கள் (எண்கள் : 47,96,285) 2. குறுந்தொகை - 6 பாடல்கள் (எண்கள் : 18,27,58,371,399,400) 3. புறநானூறு - 6 பாடல்கள் (எண்கள் : 25,86,92,183) 4. முல்லைப் பாட்டு - (முழுவதும்)	(12 Hours)
அலகு - 3	அற இலக்கியம் 1. திருக்குறள் - அறன் வலியுறுத்தல் 2. நாலடியார் - 8 பாடல்கள் 3. பழமொழி நானூறு - 8 பாடல்கள் 4. இனியவை நாற்பது - 8 பாடல்கள்	(12 Hours)
அலகு - 4	காப்பியம் & சமய இலக்கியம் 1. சிலப்பதிகாரம் - வழக்குரை காதை (முழுவதும்) 2. கம்ப ராமாயணம் - குகப்படலம் (25 பாடல்கள்) 3. சீறாப்புராணம் - மானுக்குப் பிணை நின்ற படலம் (30 பாடல்கள்) 4. இயேசு காவியம் - ஊதாரிப் பிள்ளை (முழுவதும்)	(12 Hours)
அலகு - 5	பக்தி & பகுத்தறிவு இலக்கியம் 1. நாயன்மார் பாசுரங்கள் - சமயக்குரவர் நால்வர் (4 பாடல்கள்) 2. ஆழ்வார் பாசுரங்கள் - முதலாழ்வார்கள் மற்றும் ஆண்டாள் (4 பாடல்கள்) 3. திருமந்திரம் - திருமுலர் (7 பாடல்கள்) 4. இராவண காவியம் - புலவர் குழந்தை (5 பாடல்கள்)	(12 Hours)

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- 1 செய்யுள் திரட்டு - தமிழ்த்துறை, சி.அப்துல் ஹக்கீம் கல்லூரி வெளியீடு. 2024 சூன் வெளியீடு
- 2 தமிழ் இலக்கிய வரலாறு - பேரா.மது.ச.விமலானந்தம்
அபிராமி பதிப்பகம், இராயபுரம், சென்னை -13
மறு பதிப்பு -2002
- 3 நற்றிமிழ் இலக்கணம் - டாக்டர்.சொ.பரமசிவம்,
பட்டுப் பதிப்பகம், 1269, 32-ஆம் தெரு
அண்ணாநகர் மேற்கு, கம்பர் குடியிருப்பு,
சென்னை -40
பன்னிரண்டாம் பதிப்பு -2012

Web Sources

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- Tamil virtual University Library- [www.tamilvu.org/ library](http://www.tamilvu.org/library) <http://www.virtualvu.org/library>
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- Tamil Books on line- [books.tamil cube.com](http://books.tamilcube.com)
- Catalogue of the Tamil books in the Library of British Congress archive.org
- Tamil novels on line - books.tamilcube.com

Cos	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	1	1	3	2	2	-	-	-	-	-	
CO2	1	2	2	3	3	-	-	-	-	-	
CO3	2	2	3	2	3	-	-	-	-	-	
CO4	3	2	2	2	3	-	-	-	-	-	
CO5	3	2	3	2	3	-	-	-	-	-	
Mean Overall Score											

3 – Strong; 2 – Medium; 1 – Low

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Syllabus for All First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
II	GEL	U24FTA201	TAMIL - I	60	3	25	75	100

OBJECTIVES

- தமிழ் மொழியின் பண்புகளை மாணவர் மனதில் பதிய வைத்தல் தாய்மொழியின் பழமை, சிறப்பு, விழுமியங்கள் ஆகியவற்றைக்கற்பித்தல்.செவ்வியல் இலக்கியங்களை அறியச் செய்தல்
- தமிழில் உள்ள இலக்கிய வடிவங்களை அறிமுகப்படுத்தி படைப்பாக்கத்திற்கு துணை நின்றல்.இலக்கிய இலக்கணக் கற்றல் வழி போட்டித் தேர்வுகளுக்கு ஆயத்தப்படுத்தல்.

COURSE OUTCOME(S)

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	காலந்தோறும் தமிழ் இலக்கியங்களில் மாறுபடும் பாடுபொருள். வடிவம் முதலியவற்றை வரலாற்றின் வழி உணர்த்தல்.	K4
CO2	சிறுநிலக்கியங்களின் வழி இலக்கியச் சுவையினையும் பண்பாட்டு அறிவினையும் பெறுதல்	K1
CO3	கவிதை வழி சமூகச் சிந்தனைகளையும், தேவைகளையும் கவிதை வழி இயம்பல்.	K2
CO4	சிறுகதைகளின் வாயிலாக சமகால மனிதர்களின் பண்பு நலன்களை அறிய வைத்தல்.	K4
CO5	நடிப்பாற்றல், படைப்பாற்றல் மற்றும் கலைத் தன்மைகளை வளர்த்தல்.	K6

பாடத்திட்டம்

அலகு - 1	இலக்கிய வரலாறு அறிமுகம் 1. சிறுநிலக்கியங்கள் - அறிமுகம் 2. கவிதை - தோற்றமும் வளர்ச்சியும் 3. சிறுகதை - தோற்றமும் வளர்ச்சியும் 4. நாடகம் - தோற்றமும் வளர்ச்சியும்	(12 Hours)
அலகு - 2	சிறுநிலக்கியங்கள் & தனிப்பாடல்கள் 1. கலிங்கத்துப்பரணி - களம் பாடியது (7 பாடல்கள்) 2. குற்றாலக் குறவஞ்சி - வசந்தவல்லி பந்தடித்தல் (7 பாடல்கள்) 3. முக்கூடற்பள்ளு - பள்ளியர் ஏசல் (11 பாடல்கள்) 4. தனிப்பாடல்கள் - ஓளவை, வீரராகவர், காளமேகம், சத்திமுத்திப் புலவர்,படிக்காகப் புலவர், பட்டினத்தடிகள், சொக்கநாதப்புலவர் (7பா.)	(12 Hours)
அலகு - 3	கவிதை 1. பாரதியார் - பாரத தேசம் 2. பாரதிதாசன் - குடும்ப விளக்கு 3. அப்துல் ரகுமான் - வீடு (பித்தன்) 4. வாலி - புத்தகச் சந்தை 5. ஈரோடு தமிழன்பன் - எட்டாவது சீர் (வணக்கம் வள்ளுவ)	(12 Hours)
அலகு - 4	சிறுகதை 1. புதுமைப்பித்தன் - கடவுளும் கந்தசாமிப்பிள்ளையும் 2. ஜெயகாந்தன் - வாய்ச்சொற்கள் 3. அ.விநாயகமூர்த்தி - பரிசு 4. வைரமுத்து - இப்படியும் ஒருவன் இறந்தான்	(12 Hours)
அலகு - 5	நாடகம் 1. பேரறிஞர் அண்ணா - வேலைக்காரி 2. ஆறு.அழகப்பன் - கொல்லிப்பாவை	(12 Hours)

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பார்வை நூல்கள்

- 1 செய்யுள் திரட்டு - சி.அப்துல் ஹக்கீம் கல்லூரி வெளியீடு.
2024 சூன் வெளியீடு
- 2 தமிழ் இலக்கிய வரலாறு - பேரா.மது.ச.விமலானந்தம்
அபிராமி பதிப்பகம், இராயபுரம், சென்னை -13
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- Tamil Books on line- books.tamilcube.com
- Catalogue of the Tamil books in the Library of British Congress archive.org
- Tamil novels on line - books.tamilcube.com

Cos	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	2	2	2	3	2	-	-	-	-	-	
CO2	2	2	3	2	2	-	-	-	-	-	
CO3	2	2	3	2	3	-	-	-	-	-	
CO4	2	2	3	2	3	-	-	-	-	-	
CO5	2	2	2	3	3	-	-	-	-	-	
Mean Overall Score											

3 – Strong; 2 – Medium; 1 – Low

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C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
I	GEL	U24CSL201	SKILL LANGUAGE TAMIL திறன் வளர்தமிழ்	60	2	50	50	100

OBJECTIVES

- மாணவர்கள் இலக்கணப் பிழையின்றி எழுதுதல், பேசுதல்
- ஊடகத் தமிழ்ச் செய்திகளை அறிதல்
- கட்டுரை, கவிதை மற்றும் நேர்காணலுக்கான விதிகள் அறிதல்

COURSE OUTCOME(S)

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	தமிழின் இயல்புகளை அறிதல்	K2
CO2	தமிழ்ச் சொற்களிடையே வேறுபாட்டை உணர்தல்	K2
CO3	நடைமுறை சார் மொழித்திறன்களை உணர்த்தல்	K3
CO4	மொழிப்பயிற்சியை வெளிக்கொணர்தல்	K4
CO5	திறன்களை வளர்க்கும் நெறிகளை அறிதல்	K5

பாடத்திட்டம்

அலகு - 1	கற்றல் திறன் - 1 1. எண்களை எழுத்தால் எழுதுதல் 2. குறில், நெடில் வேறுபாடு அறிதல் 3. திணை, பால் வேறுபாடு அறிதல் 4. மயங்கொலி வேறுபாடு அறிதல் (ர-ற: ந-ண-ன: ல-ள-ழ) 5. இரு பொருள் அறிதல்	(12 Hours)
அலகு - 2	கற்றல் திறன் - 2 1. வாக்கியத்தில் அமைத்தல் 2. அகரவரிசைப்படுத்துதல் 3. பொருந்தாத சொல்லைக் கண்டறிதல் 4. சொற்களை ஒழுங்குபடுத்தி சொற்றொடராக்குதல்	(12 Hours)
அலகு - 3	கேட்டல் திறன் - 1 1. நூல், செய்தித்தாள் வாசித்தல் 2. பாடல் ஒப்புவித்தல் 3. நேர் காணல்	(12 Hours)
அலகு - 4	கேட்டல் திறன் - 2 1. நூல் மதிப்புரை 2. ஏதேனும் ஒரு தலைப்பில் பேசிப் பழகுதல்.	(12 Hours)
அலகு - 5	உணர்தல் திறன் 1. கட்டுரை, கவிதை, துணுக்கு இயற்றுதல் 2. அறிக்கை தயாரித்தல் 3. குழு நடிப்பு	(12 Hours)

C. Abdul Hakeem College (Autonomous), Melvisharam.

பார்வை நூல்கள்

- 1 மேடைப் பேச்சுக்கலை - டேல் கார்னகி , கண்ணதாசன் பதிப்பகம்
2012 வெளியீடு
- 2 பேச்சுக்கலை - முனைவர் ப.இப்ராஹிம்
என்.சி.பி.எச். வெளியீடு
முதல் பதிப்பு,2021
3. நற்றமிழ் இலக்கணம் - டாக்டர்.சொ.பரமசிவம்,
பட்டுப் பதிப்பகம், 1269, 32-ஆம் தெரு
அண்ணாநகர் மேற்கு, கம்பர் குடியிருப்பு,
சென்னை -40
பன்னிரண்டாம் பதிப்பு -2012

Cos	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	2	2	3	3	2	-	-	-	-	-	
CO2	1	2	3	3	1	-	-	-	-	-	
CO3	2	2	3	3	2	-	-	-	-	-	
CO4	2	2	3	3	3	-	-	-	-	-	
CO5	2	2	3	3	2	-	-	-	-	-	
Mean Overall Score											

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
I	GEL	U24FUR101	URDU - I	60	3	25	75	100

Objectives:

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Describe the Basic Grammar Rules and Sentence Construction	K5
CO2	Identify and Classify the Nouns and Genders	K4
CO3	Comprehend and Analyze Historical Stories (Hikayat)	K4
CO4	Explore and Critique the Essays (Inshayiya)	K6
CO5	Analyze Biographies of Notable Personalities	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

UNIT – I [12 Hours] ➤ Qawaid ❖ Huroof, ki Tareef ❖ Huroof e Tahaji Aur Uske Aqsaam ❖ Jumla ki Tareef ❖ Jumla Banane ka Tariqah UNIT – II [12 Hours] ❖ Ism Ki Tareef ❖ Ism ke Aqsaam Misalon Ke Sath ❖ Jins(Muzakkar aur Maunnas) ki Tareef ❖ Jins ke Aqsaam ❖ Muzakkar aur Muannas ki Tareef ❖ Muzakkar Se Muannas Banane ka Tariqah UNIT – III [12 Hours] ➤ Hikayat ❖ Hikayat ki tareef ❖ Sahabi aur Khalifa ki tareef ❖ Hikayat-e-Sahaba (Khulafa e Raashidain - Sayeduna Abu Bakr Siddiq(R.A),Hazrat Umar(R.A),Hazrat Usman(R.A),Hazrat Ali(R.A) ❖ Shaikh Saadi ka taruf ❖ Hikayat-e-Shaik Saadi ❖ Ek Badsha ❖ Haroon Rasheed	یونٹ I- ✓ قواعد ❖ حروف کی تعریف ❖ حروف تہجی اور اس کے اقسام ❖ جملہ کی تعریف ❖ جملہ بنانے کا طریقہ یونٹ II- ✓ اسم کی تعریف ❖ اسم کے اقسام مثالوں کے ساتھ ❖ جنس (مذکر اور مؤنث) کی تعریف ❖ جنس کے اقسام ❖ مذکر اور مؤنث کی تعریف ❖ مذکر سے مؤنث بنانے کا طریقہ یونٹ III- ✓ حکایت ❖ حکایت کی تعریف ❖ صحابی اور خلیفہ کی تعریف ❖ حکایت صحابہ (خلفائے راشدین سیدنا ابوبکر صدیق رضی اللہ عنہ، حضرت عمر رضی اللہ عنہ، حضرت عثمان رضی اللہ عنہ، حضرت علی رضی اللہ عنہ) ❖ شیخ سعدی کا تعارف ❖ حکایت شیخ سعدی ❖ ایک بادشاہ ❖ ہارون رشید یونٹ IV- ✓ انشائیہ ❖ انشائیہ کی تعریف ❖ سر سید احمد خان کا تعارف ❖ امید کی خوشی - سر سید احمد خان ❖ رشید احمد صدیقی کا تعارف ❖ ڈاکٹر عبدالحق مرحوم - رشید احمد صدیقی۔ یونٹ V - ✓ شخصیات کی سوانح ❖ سوانح کی تعریف
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C. Abdul Hakeem College (Autonomous), Melvisharam.

UNIT – IV [12 Hours] ➤ Inshayiya ❖ Inshayiya ki tareef ❖ Sir Syed Ahamed Khan ka taruf ❖ Umeed Ki Khushi – Sir Syed Ahamed Khan ❖ Rasheed Ahmed Siddiqi ka taruf ❖ Dr. Abdul Haq Marhoom – Rasheed Ahmed Siddiqi UNIT – V [12 Hours] ➤ Shakhsiyat ki Sawaneh ❖ Sawaneh ki tareef ❖ Allama Iqbal ki Sawaneh ❖ Moulana Abul Kalam Azad ki Sawaneh	❖ علامہ اقبال کی سوانح □□ ❖ مولانا ابوالکلام آزاد کی سوانح □□
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_____ # Self Study Component for Seminar/Assignment:

(Questions should not be asked from self study component in the End Semester Examinations)

Text Books:

NISAB-E-JAMEEL EDITED BY Dr.S.MOHAMED YASSIR & Dr.S.MOHAMED MUDDASSIR

Reference Book:

- Qawayad Urdu– Maulvi Abdul Haq
- Hikayat e Sahaba – Maulana Yusuf Kandhalvi
- Mazameen e Sir Syed
- Inshayiya aur Inshayiye – Syed Muhammad Hasnain
- Mazhar-e- Adab – Edited by Dr.K.Habeeb Ahmed & Dr.K.H.Kaleemullah
- Adab-E-Jameel – Edited by Dr.K.Habeeb Ahmed , Dr.S.M.Yassir & Dr.S.M.Muddassir

Web Resources :

1. www.rekhta.org 2. www.urduchannel.in 3. www.urducouncil.nic.in

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3							
CO2	3	3	3	3							
CO3	3	3	3	3							
CO4	3	3	3	3							
CO5	3	3	3	3							

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
II	GEL	U24FUR201	URDU - II	60	3	25	75	100

Objectives:

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Describing Ghazals	K2
CO2	Analyze Urdu Poets' Contributions to Ghazal	K4
CO3	Evaluating Nazams and Its Themes	K5
CO4	Analyze and Critique Nazams by Various Poets	K5
CO5	Evaluate Literary Translations	K6

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

UNIT – I [12 Hours]

➤ Ghazliyat

- ❖ Ghazal ki Tareef
- ❖ Mirza Ghalib ka taruf
- ❖ Mirza Ghalib ki Ghazal → Dil Hi toh Yeh Na Sang....
- ❖ Momin Khan Momin ka taruf
- ❖ Momin Khan Momin ki Ghazal → Adam Mein Rehte tu..

- یونٹ I –
☒ غزلیات ✓
☒ غزل کی تعریف ❖
☒ مرزا غالب کا تعارف ❖
☒ مرزا غالب کی غزل □ دل ہی تو یہ نہ سنگ... ❖
☒ مومن خان مومن کا تعارف ❖
☒ مومن خان مومن کی غزل □ عدم میں رہتے تو۔ ❖

UNIT – II [12 Hours]

- ❖ Khaja Mir Dard ka tarruf
- ❖ Khaja Mir Dard → Tuhmatein Apne Zimme
- ❖ Jigar Muradabadi ka Tarruf
- ❖ Jigar Muradabadi ki Ghazal → Na Dunya ke Sitam....

- یونٹ II –
☒ خواجہ میر درد کا تعارف ❖
☒ خواجہ میر درد... تہمتیں چند اپنے ذمے ❖
☒ جگر مراد آبادی کا تعارف ❖
☒ جگر مراد آبادی کی غزل □ نہ دنیا کے ستم... ❖

UNIT – III [12 Hours]

➤ Nazmein

- ❖ Nazm ki Tareef
- ❖ Allama Iqbal ka tarruf
- ❖ Allama Iqbal ki Nazm → Khitab Ba Naujawan-e-Islam
- ❖ Khaja Altaf Hussain Hali ka tarruf
- ❖ Altaf Hussain Hali Ki Nazm → Taleem Ki Ahmiyat

- یونٹ III –
☒ نظمیں □ □ ✓
☒ نظم کی تعریف ❖
☒ علامہ اقبال کا تعارف ❖
☒ علامہ اقبال کی نظم □ □ خطابِ نو جوان اسلام ❖
☒ خواجہ الطاف حسین حالی کا تعارف ❖
☒ الطاف حسین حالی کی نظم □ □ تعلیم کی اہمیت ❖

UNIT – IV [12 Hours]

- ❖ Akbar Allahabadi ka tarruf
- ❖ Akbar Allahabadi ki Nazm Nagma e Hasrat
- ❖ Sahir Ludhyanavi ka tarruf
- ❖ Sahir Ludhyanvi Ki Nazm Taj Mahal
- ❖ Faiz Ahmad Faiz ka tarruf
- ❖ Faiz Ahmad Faiz ki Nazm Subh-e-Azadi

- یونٹ IV –
☒ اکبر الہ آبادی کا تعارف ❖
☒ اکبر الہ آبادی کی نظم نغمہ حسرت ❖
☒ ساحر لدھیانوی کا تعارف ❖
☒ ساحر لدھیانوی کی نظم تاج محل ❖
☒ فیض احمد فیض کا تعارف ❖
☒ فیض احمد فیض کی نظم صبح آزادی ❖

یونٹ V –

- ترجمہ نگاری ✓
☒ ترجمہ نگاری کی تعریف ❖

C. Abdul Hakeem College (Autonomous), Melvisharam.

❖ تجارتي الفاظ (اردو اور انگريزي)

❖ پياري اردو (ترجمہ اردو سے

انگريزي)

❖ مکالمات (اردو اور انگريزي)

UNIT – V [12 Hours]

- Tarjama Nigari
- ❖ Tarjama Nigari Ki taareef
- ❖ Tijarati Alfaz (Urdu Aur Angrezi)
- ❖ Pyari Urdu (Tarjuma Urdu se Angrezi)
- ❖ Makalimat (Urdu Aur Angrezi)

_____ # Self Study Component for Seminar/Assignment:

(Questions should not be asked from self study component in the End Semester Examinations)

Text Books:

NISAB-E-JAMEEL EDITED BY Dr.S.MOHAMED YASSIR & Dr.S.MOHAMED MUDDASSIR

Reference Book:

- Deewan-e-Meer
- Deewan-e-Dard
- Deewan-e-Ghalib
- Kuliyaath-e-Momin
- Kuliyaath-e-Akbar
- Kuliyaath-e- Iqbal
- Kuliyaath-e- Jigar
- Kuliyaath-e- Saher Ludhyanvi

Web Resources:

1. www.rekhta.org
2. www.urduchannel.in
3. www.urducouncil.nic.in

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	2							
CO2	2	3	3	2							
CO3	3	2	3	3							
CO4	3	2	2	2							
CO5	3	3	2	3							

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for First Year UG Courses effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
II	GEL	U24CSL201	SKILL LANGUAGE URDU LANGUAGE IDENTIFICATION AND COMPREHENSION	60	2	50	50	100

Objectives:

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Understanding Language Skills, Urdu Alphabets and Pronunciation	K2
CO2	Analyze Writing Proficiency in Urdu and Listening Skills	K4
CO3	Describe Compound Words in Urdu	K4
CO4	Constructing Basic Sentences and Reading Skills	K5
CO5	Enhancing Communication Skills and Writing Skills	K6

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

UNIT – I [12 Hours]

➤ Introduction about LSRW

- ❖ Listening
- ❖ Speaking
- ❖ Reading and
- ❖ Writing

یونٹ – I [12 گھنٹے]
LSRW کے بارے میں تعارف ✓

- ✓ سمات
- ✓ تقریر
- ✓ قرات
- ✓ تحریر

یونٹ – II [12 گھنٹے]
✓ سمات

UNIT – II [12 Hours]

Listening:

- ❖ Huroof-e-Thaji (Urdu Alphabet)
- ❖ Murakab Alfaaz (Compound Words)
- ❖ Small Sentences

✓ اردو حروف تہجی
✓ مرکب الفاظ
✓ چھوٹے جملے

یونٹ – III [12 گھنٹے]
✓ تقریر

✓ اردو حروف تہجی
✓ مرکب الفاظ
✓ چھوٹے جملے

UNIT – III [12 Hours]

Speaking:

- ❖ Huroof-e-Thaji (Urdu Alphabet)
- ❖ Murakab Alfaaz (Compound Words)
- ❖ Small Sentences

یونٹ – IV [12 گھنٹے]
✓ قرات

✓ اردو حروف تہجی
✓ مرکب الفاظ
✓ چھوٹے جملے

UNIT – IV [12 Hours]

Reading:

- ❖ Huroof-e-Thaji (Urdu Alphabet)
- ❖ Murakab Alfaaz (Compound Words)
- ❖ Small Sentences

یونٹ – V [12 گھنٹے]
✓ تحریر

✓ اردو حروف تہجی
✓ مرکب الفاظ
✓ چھوٹے جملے

C. Abdul Hakeem College (Autonomous), Melvisharam.

UNIT – V [12 Hours]

Writing:

- ❖ Huroof-e-Thaji (Urdu Alphabet)
- ❖ Murakab Alfaaz (Compound Words)
- ❖ Small Sentences

_____ # Self Study Component for Seminar/Assignment:

(Questions should not be asked from self study component in the End Semester Examinations)

Text Books:

Urdu for All – Part -I & II published by NCPUL, New Delhi

Reference Books:

1. "Urdu: An Essential Grammar" by Ruth Laila Schmidt
2. "Urdu-English English-Urdu Dictionary" by S. M. Salimuddin, Suhail Anjum, and Rauf Parekh
3. "Urdu ki Pehli Kitab" by Muhammad Sharif Baqa
4. "Learning Urdu: A Comprehensive Course" by Mahvash Shaheen

Web Resources :

1. www.rekhta.org
2. www.urduchannel.in
3. www.urducouncil.nic.in
4. BBC Urdu
5. UrduPod101
6. YouTube Channels - Urdu Stories for Kids

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	3							
CO2	3	2	2	3							
CO3	3	3	3	3							
CO4	3	2	2	3							
CO5	3	3	2	2							

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All I Year UG Courses effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>GEL</i>	<i>U24FEN101</i>	<i>ENGLISH – I</i>	<i>60</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Course Objectives

CO1	To enable learners to acquire self-awareness required in various life situations.
CO2	To enable learners to inculcate positive thinking required in various life situations.
CO3	To help them acquire the attribute of empathy
CO4	To assist them in acquiring creative and critical thinking abilities
CO5	To enable them to learn the basic grammar

Unit I

Prose

- At School - M. K. Gandhi
- My Early Days - A.P.J. Abdul Kalam

Poetry

- The Character of Happy Life - Henry Wotton
- Stopping by the Woods on a Snowy Evening - Robert Frost

Unit II

Prose

- My Financial Career - Stephen Leacock
- Computeracy - Peter Lurie

Poetry

- Where the Mind is Without Fear – Rabindranath Tagore
- If – Rudyard Kipling

Unit III : Short Stories

- The Happy Prince - Oscar Wilde
- Engine Trouble - R.K. Narayan

Unit IV : Autobiography & Reader's Theatre

- I am Malala (Chapter 1) - Malala Yousafzai,
- The Refund – Fritz Karinthy

Unit V

Lexical Skills & Grammar

- Synonyms and Antonyms
- Homophones and Homonyms
- Words often Confused

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Grammar

- a. Sentence
- b. Subject and predicate
- c. Parts of Speech
- d. Noun and its kinds
- e. Pronoun and its kinds
- f. Articles and Prepositions

Prescribed Book: New Vistas in English – I, Board of Editors, Published by Hakeem Publication, Department of English, C. Abdul Hakeem College (Autonomous), Melvisharam-632509.
www.cahc.ac.in, Mail: hakeemcollege@edu.in

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All I Year UG Courses effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>GEL</i>	<i>U24FEN201</i>	<i>ENGLISH – II</i>	<i>60</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Course Objectives

CO1	To facilitate self-awareness for handling diverse life situations.
CO2	To cultivate positive thinking skills for various life scenarios.
CO3	To develop empathy as a core attribute.
CO4	To nurture creative and critical thinking abilities.
CO5	To apply acquired grammar knowledge to improve the quality and effectiveness.

Unit I

Prose

- The Secret of Work - Swami Vivekananda
- Uncle Podger Hangs a Picture – Jerome K Jerome

Poetry

- Satan's Speech - John Milton
- Night of the Scorpion - Nissim Ezekiel

Unit II

Prose

- Mobile and Mixed Up – Anil Dharker
- Words of Wisdom – Chetan Bhagat

Poetry

- The Road Not Taken – Robert Frost
- Alice Fell or Poverty – William Wordsworth

Unit III

Short Stories

- The Lady or the Tiger - Frank Stockton
- The Diamond Necklace – Guy de Maupassant

Unit IV

Biography & One Act Play

- The Saga of a Philanthropist
- The Never Never Nest – Cedric Mount

Unit V

Lexical Skills & Grammar

- One Word Substitutes
- Correct Usage of words
- Formation of plurals

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Parts of Speech

- a. The Phrase and The Clause - Types
- b. Adjective and its kinds
- c. Verb and its kinds
- d. Conjunction
- e. Interjection

Prescribed Book: New Vistas in English–II, Board of Editors, Published by Hakeem Publication, Department of English, C. Abdul Hakeem College (Autonomous), Melvisharam-632509.
www.cahc.ac.in, Mail: hakeemcollege@edu.in

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for All I Year UG Courses effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>GEL</i>	<i>U24FEN201</i>	<i>SKILLS FOR COMMUNICATION</i>	<i>60</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Course Objectives

CO1	To inculcate communicative proficiencies in the learners
CO2	To develop the essential aspects of effective written communication.
CO3	To implant essential emotions needed in professional life.
CO4	To enhance contextual communication in personal and professional situations with courtesy
CO5	To instill competences required in recruitment process

Unit I - Spoken Communication:

1. Communication Etiquette
2. Introducing Self and Others
3. Listening for Specific Information
4. Asking for Information and Giving Information
5. Giving and Following Instructions

Unit II - Written Communication:

1. Paragraph and Types of Paragraphs
2. Descriptive Writing – Writing a Short Descriptive Essays of Two to Three Paragraphs
3. Dialogue Writing
4. Preparing Agenda for the Meeting
5. Writing Minutes of the Meeting

Unit III - Intrapersonal Communication:

1. Emotional Intelligence
2. Goal Setting
3. Stress Management
4. Positive Attitude
5. Common Sense

Unit – IV - Interpersonal Communication:

1. Listening to Famous Speeches and Poems
2. Making Short Speeches – Welcome Address and Vote of Thanks
3. Making Short Presentation with PPT
4. Day - to - Day Communication
5. Communication with Fellow-Employee

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Unit – V - Employment Communication:

1. Preparing Resume & Curriculum Vitae
2. Writing Covering Letter
3. Aptitude Test
4. Facing an Interview
5. Group Discussion

Prescribed Book: Skills for Communication, Board of Editors, Published by Hakeem Publication, Department of English, C. Abdul Hakeem College (Autonomous), Melvisharam-632509.
www.cahc.ac.in, Mail: hakeemcollege@edu.in

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Syllabus for B.Sc., Zoology effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>CC Theory</i>	<i>U24MZL101</i>	<i>INVERTEBRATA</i>	<i>75</i>	<i>5</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives: To understand the systematic and functional morphology of various groups of invertebrates and to study their economic importance, affinities and adaptations.

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Enumerate the features and classification of invertebrates	K1 K2 K3
CO2	Summarize the general characters and morphology of porifera and coelenterate	
CO3	Compare the structural morphology and adaptation of helminths	
CO4	Distinguish the classification and morphology of annelids and arthropods	K4 K5
CO5	Appraise the structural organization of molluscs and echinoderms	

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Unit – I (15 Hours)

Salient Features and General classification of Phylum Invertebrate up to orders.

PROTOZOA: General characters and classification up to classes with examples.

Type study: *Paramecium*-general organization, Conjugation.

General topic: Parasitic Protozoans (*Entamoeba* and *Plasmodium*)

Unit – II (15 Hours)

PORIFERA: General characters and classification up to classes with examples.

Type study – Sycon General organization, Skeleton and Reproduction

General topic: Canal system in sponges.

COELENTERATA: General characters and classification up to classes with examples.

Type study – Obelia- Structure of Obelia colony, polymorphism, Reproduction and alternation of generations. **General topic:** Corals and Coral reefs

Unit – III (15 Hours)

HELMINTHES: General characters and classification up to classes with examples.

Type study – *Taenia solium*- Morphology, Reproductive system and life cycle.

General topic: Helminth parasites and parasitic adaptation.

Unit – IV (15 Hours)

ANNELIDA: General characters and classification up to classes with examples.

Type study: Earth worm- Morphology, excretory, Reproductive system

General topic: *Peripatus* and its affinities, metamerism in Annelida.

ARTHROPODA: General characters and classification up to classes with examples.

Type study – Prawn (fresh water)-Morphology, Appendages, Digestive, Reproductive system

General Topics: Larval forms in Crustaceans, Social life in insects (*Self-study*)

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Unit – V

(15 Hours)

MOLLUSCA: General characters and classification up to classes with examples.

Type study –freshwater mussel (Unio)- Morphology, digestive and Reproductive system.

General topic: Foot in Mollusca, Cephalopods as highly advanced molluscs.

ECHINODERMATA: General characters and classification up to classes with examples.

Type Study- Sea star- Morphology and Reproductive system

General Topics: Water Vascular system, Echinoderm larvae and their significance

Self Study Component for Seminar/Assignment:

Innovation in Invertebrates (Students should prepare Scientific Writings/ PPT/ Create Videos/ pertaining to any modern topics like Biomimicry/ Economic Importance of Invertebrates

(Questions should not be asked from self-study component in the End Semester Examinations)

Experiential learning:

Educational Tour Visit to a Zoological Park/ Museum/ Governmental Institutes

Text Books:

1. Barnes.2006. Invertebrate Zoology. (7th Indian Edition) Cengage Learning, India.
2. Jordan, E.L. and P.S.Verma, 2011. Invertebrate Zoology, 12th Edition. S.Chand and Co.Ltd., New Delhi.

Reference Books:

1. Ekambaranatha Ayyar.M and T.N. Ananthakrishnan, 1992. Manual of Zoology Vol.1 [Invertebrata], Viswanathan [Printers and Publishers] Pvt. Ltd.; Madras.
2. Kotpal, R.L. 1988-1992 Protozoa, Porifera, Coelenterata, Helminthes, Annelida, Arthropoda, Mollusca, Echinodermata. Rastogi Publications, Meerut.
3. Parker and Haswell, 1964. Text Book of Zoology. Vol.1 [Invertebrata].A.Z.T; B.S.Publishers and distributors, New Delhi.
4. L.A Borradiile and F.A. Pott.TheInvertebrates.Cambridge University Press. UK.
5. P.S.Dhami and J.K.Dhami. Invertebrate Zoology, S.Chand and Co. New Delhi.
6. Hyman L.H. 1955. The Invertebrate Vol.I-IV., McGraw Hill Co. New York.
7. Barrington, 1969. E.J.W. Invertebrate structure and function.ELBS Publication.

e-Resources:

1. <https://www.uou.ac.in/sites/default/files/slm/MSCZO-501.pdf>
2. <http://rguir.inflibnet.ac.in:8080/jspui/handle/123456789/17431>
3. <http://rguir.inflibnet.ac.in:8080/jspui/handle/123456789/17703>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	3	3	3	3	3	3	2	2	2.8
CO2	3	3	3	3	3	3	3	3	2	2	2.8
CO3	3	3	3	3	3	3	3	3	2	2	2.8
CO4	3	3	3	3	3	3	3	3	3	3	3.0
CO5	3	3	3	3	3	3	3	3	2	1	2.7
Mean Overall Score											2.8

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Prof. M. Khaleelur Rahuman	Dr. R. Rafi Mohamed, HOD

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>CC Practical</i>	<i>U24MZLP11</i>	<i>PRACTICAL - I INVERTEBRATA</i>	<i>45</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives: To equip students with the required knowledge to identify and dissect the various invertebrate systems

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Identify the different groups of invertebrate animals by observing their external characteristics.	K1
CO2	Interpret the organs, organ system and their functions in lower animals.	K2
CO3	Illustrate the different modes of life and their adaptation based on the environment.	K3
CO4	Differentiate the internal organs and mount the mouthparts and scales of invertebrates.	K4
CO5	Compile various invertebrate phyla	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Major Dissection (Hands on):

Cockroach: Nervous and Digestive system.

Prawn: Nervous and digestive system, appendages.

Major Dissection (Demo):

Leech: Nervous and Reproductive system.

Earthworm: Nervous and Reproductive system.

Minor Dissection (Mounting)

Mouth parts – Cockroach, Honey Bee, House fly and Mosquito mouth parts

Minor Dissection (demo/charts)

Pila globosa: Radula

Freshwater muscle: Pedal ganglia

Spotters:

(i). **Protozoa:** Amoeba, Paramecium, Entamoeba *histolytica*, Plasmodium *vivax*

(ii). **Porifera:** Sycon, Spongilla, Sycon - T.S & L.S, Spicules, Gemmule

(iii). **Coelenterata:** Obelia – Colony & Medusa, Aurelia, Physalia

(iv). **Platyhelminthes:** Fasciola *hepatica*, Fasciola larval forms – Redia, Cercaria, Taenia *solium*,

(v). **Nemathelminths:** Ascaris (Male & Female), Ancylostoma, Wuchereria

(vi). **Annelida:** Nereis, Aphrodite, Chaetopteurs, Hirudinaria, Trochophore larva

(vii). **Arthropoda:** Cancer, Palaemon, Scorpion, Limulus, Peripatus, Larvae - Nauplius, Mysis, Zoea.

(viii). **Mollusca:** Chiton, Unio, Pteredo, Sepia, Octopus

(ix). **Echinodermata:** Asterias, Ophiothrix, Echinus, Cucumaria, Bipinnaria larva

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Text Books:

1. Ekambaranatha Iyyar and T. N. Ananthakrishnan, 1995 A manual of Zoology Vol.I (Part 1, 2) S. Viswanathan, Chennai
2. Ganguly, Sinha and Adhikari, 2011. Biology of Animals: Volume I, New Central Book Agency; 3rd revised edition. 1008 pp.
3. Sinha, Chatterjee and Chattopadhyay, 2014. Advanced Practical Zoology, Books & Allied Ltd; 3rd Revised edition, 1070 pp.
4. Lal, S. S, 2016. Practical Zoology Invertebrate, Rastogi Publications.
5. Verma, P. S. 2010. A Manual of Practical Zoology: Invertebrates, S Chand, 497pp.

References Books:

1. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). The Invertebrates: A New Synthesis, III Edition, Blackwell Science.
2. Barnes, R.D. (1982). Invertebrate Zoology, V Edition. Holt Saunders International Edition.
3. Barrington, E.J.W. (1979). Invertebrate Structure and Functions. II Edition, E.L.B.S. and Nelson
4. Boradale, L.A. and Potts, E.A. (1961). Invertebrates: A Manual for the use of Students. Asia Publishing Home.
5. Lal, S.S. 2005. A text Book of Practical Zoology: Invertebrate, Rastogi, Meerut

e-resources

<https://nbb.gov.in/>

<http://www.agshoney.com/training.htm>

<https://icar.org.in/>

<http://www.csrtimys.res.in/>

<http://csb.gov.in/>

<https://iinrg.icar.gov.in/>

<https://www.nationalgeographic.com/animals/invertebrates/>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	1	3	3	1	2	1	3	3	3	2.3
CO2	3	1	3	3	1	2	2	1	2	2	2.0
CO3	3	3	1	3	2	3	1	3	3	3	2.5
CO4	3	1	3	2	1	3	3	3	3	3	2.5
CO5	3	3	1	1	3	3	3	1	1	3	2.2
Mean Overall Score											2.3

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
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C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>ISEC Theory</i>	<i>U24SZL101</i>	<i>PRINCIPLES OF ANIMAL TAXONOMY AND BIOSYSTEMATICS (FC)</i>	<i>30</i>	<i>2</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives: To be familiar with the basics of classification of different animal phyla, collection and classification of species, and their genetic variation.

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Quote the history of systematics	K1 K2 K3
CO2	Explain the basic concept and theories of systematics	
CO3	Relate species with nature	
CO4	Categorize the procedure of classification	K4 K5
CO5	Grade the various rules of zoological nomenclature and its interpretation	

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

Unit – I

(6 Hours)

Taxonomy: Introduction to Taxonomy –importance of taxonomy – Aims and tasks of a Taxonomist. History of Nomenclature. Zoological classification: kinds of classification – Phyletic lineages, components of classification – Linnean Hierarchy.

Unit – II

(6 Hours)

Biosystematics: Definition and basic concepts - Importance and applications of biosystematics in biology. Trends in biosystematics - concepts – Newer Trends in Taxonomy: morphological approach - immature stages and embryological approach - ecological approach, behavioural approach, cytological, biochemical and molecular approaches.

Unit – III

(6 Hours)

Concepts of species: typological species concept, Nominalistic species concept, biological species concept, evolutionary species concept, recognition species concepts. Polytypic species – subspecies – super species.

Unit – IV

(6 Hours)

Species collection, preservation, curating, storing and cataloging, maintaining quality of collection, methods of identification using taxonomic keys, description of taxonomic characters.

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Unit – V

(6 Hours)

International code of Zoological Nomenclature (ICZN) and its operative principles - Formation of scientific names of various taxa. Nature of scientific names – Synonyms and Homonyms - Meanings of Authors in Brackets. Types: Holotypes, Paratype, Lectotype, Syntype, Neotype and Allotype; Ethics and publications in Taxonomy Research (*Self-study*).

Self Study Component for Seminar/Assignment:

(Questions should not be asked from self-study component in the End Semester Examinations)

Text Books:

1. Kapoor, V.C. Theory and practice of animal taxonomy, Oxford and IBH, New Delhi, 247pp, 1998.
2. Agarwal and Gupta, U. Animal Taxonomy, S.Chand, New Delhi. 86pp, 2004.
3. G.G. Simpson, Principle of Animal taxonomy, Oxford IBH Publishing Company.
4. E. Mayer, Principles of Systematic Zoology. McGraw-Hill Book Co.

Reference Books:

5. E.O. Wilson, The Diversity of Life (The College Edition), W.W. Northem& Co.
6. B.K. Tikadar, Threatened Animals of India, ZSI Publication, Calcutta.
7. Tripathi, R. C., Biosystematics and Taxonomy, University Book House, Jaipur 2005.
8. Pullaiah, T., Textbook of Biosystematics Theory and Practicals, Regency Publications, 2013.
9. Ashok Verma, Principles of Animal Taxonomy, Narosa Publishing house, 2015.
10. M.Kato. The Biology of Biodiversity, Springer.
11. J.C. Avise, Molecular Markers, Natural History and Evolution, Chapman & Hall, New York.
12. E.O. Wilson, Biodiversity, Academic Press, Washington.

e-Resources

<https://www.davuniversity.org/images/files/study-material/book%20on%20taxonomy.pdf>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	3	3	3	3	3	3	2	2	2.8
CO2	3	3	3	3	3	3	3	3	2	2	2.8
CO3	3	3	3	3	3	3	3	3	2	2	2.8
CO4	3	3	3	3	3	3	3	3	3	3	3.0
CO5	3	3	3	3	3	3	3	3	2	1	2.7
Mean Overall Score											2.8

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Dr. K. Jahir Hussain	Dr. R. Rafi Mohamed

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>SEC Theory</i>	<i>U24SZL102</i>	ORNAMENTAL FISH FARMING AND MANAGEMENT (SBS - I)	75	2	25	75	100

Objectives: To highlight the importance of ornamental fish culture in relation to entrepreneurship development.

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Define the basic principles behind ornamental fish farming	K1
CO2	Describe the biology of selected ornamental fishes	
CO3	Explain the various design of ornamental fish farming techniques	
CO4	Elaborate the marketing of ornamental fish keeping	K4
CO5	Choose the best graded ornamental fish and its propagation	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6>Create)

Unit – I (6 Hours)

Introduction to ornamental fish keeping. Scope and importance of ornamental fish culture. Domestic and global scenario of ornamental fish trade and export potential. Commercially important ornamental fishes - Indigenous and exotic varieties.

Unit – II (6 Hours)

Biology of egg layers and live bearers. Food and feeding in ornamental fishes. Formulated feed and Live feed; Live feed culture. Breeding, hatchery and nursery management of egg layers (eg. Goldfish) and live bearers (e.g., Guppy).

Unit – III (6 Hours)

Aquarium design and construction; Accessories - aerators, filters and lighting. Aquarium plants and their propagation. Maintenance of aquarium and water quality management. Ornamental fish diseases, their prevention, control and treatment methods.

Unit – IV (6 Hours)

Conditioning, packing, transport and quarantine methods. Economics, trade regulations, domestic and export marketing strategies.

Unit – V (6 Hours)

Identification of locally available ornamental fishes - Egg layers and live bearers. Identification of locally available live feed organisms.

Experiential Learning: Visit to ornamental fish farm

_____ # Self Study Component for Seminar/Assignment:

(Questions should not be asked from self-study component in the End Semester Examinations)

C. Abdul Hakeem College (Autonomous), Melvisharam.

Text Books:

1. Swain SK., Sarangi N. and Ayyappan S. 2010. Ornamental fish farming. ICAR, New Delhi.
2. Living Jewels – A handbook on freshwater ornamental fish, MPEDA, Kochi.

Reference Books:

1. Dey V.K.A. 1997. A handbook on aquafarming ornamental fishes. MPEDA, Kochi.
2. Ahilan, B., Felix N. and Santhanam R. 2008. Text book of aquaculture. Daya Publishing House, New Delhi.

e-Resources

<http://ecoursesonline.iasri.res.in/course/view.php?id=297>

<https://www.ofish.org/>

<https://krishijagran.com/agripedia/income-generation-by-ornamental-fish-culture/>

<https://99businessideas.com/ornamental-fish-farming/>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	3	3	3	3	3	3	2	2	2.8
CO2	3	3	3	3	3	3	3	3	2	2	2.8
CO3	3	3	3	3	3	3	3	3	2	2	2.8
CO4	3	3	3	3	3	3	3	3	3	3	3.0
CO5	3	3	3	3	3	3	3	3	2	1	2.7
Mean Overall Score											2.8

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
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C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
II	CC Theory	U24MZL201	CHORDATA	75	5	25	75	100

Objectives: To understand the systematic and functional morphology of various groups of chordates, their affinities and adaptations to different modes of life.

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	List the features of chordates and prochordates.	K1 K2 K3
CO2	Compare the structure and adaptation of Pisces and Amphibians	
CO3	Relate the structure of reptiles and Aves.	
CO4	Survey the characters and adaptation of Mammals.	K4
CO5	Evaluate the adaptive Radiation of various animals	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Unit – I

(15 Hours)

Salient Features and General classification of Phylum Chordata upto orders.

General Characters and affinities of Prochordates –Hemichordata (*Balanoglossus*)-Urochordata (*Herdmania*)-Cephalochordata (*Amphioxus*).

Type study: *Amphioxus*-External morphology-digestive system-respiratory system- circulatory system-excretory system –reproductive system.

General topic: Origin of Chordata

Unit – II

(15 Hours)

PISCES - General characters and classification up to orders.

Type study: *Scoliodon* (Shark) - External morphology-digestive system-respiratory system-circulatory system-urinogenital system.

General topic: Migration in fishes, parental care in fishes.

AMPHIBIA - General characters and classification up to orders.

Type study: *Rana* (Frog)- External morphology-digestive system-respiratory system- circulatory system-excretory system –reproductive system

General topic: Parental care in Amphibia

Unit – III

(15 Hours)

REPTILIA - General characters and classification upto orders.

Type study – *Calotes* (Garden Lizard) - External morphology-digestive system-respiratory system-circulatory system-excretory system –reproductive system.

General topic: Structure of Poison apparatus and biting mechanism

Identification of poisonous and non – poisonous snakes of India.

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Unit – IV

(15 Hours)

AVES - General characters and classification upto orders.

Type study – *Columba* (Common rock pigeon)- External morphology-digestive system-respiratory system- circulatory system-excretory system –reproductive system

General topic: Characters of Archaeopteryx – connecting link.

Flight adaptation, Bird Migration

Unit – V

(15 Hours)

MAMMALIA - General characters and classification upto orders.

Type study – *Oryctolagus* (Rabbit) - External morphology-digestive system-respiratory system- circulatory system-excretory system –reproductive system.

General topic: Adaptation of Aquatic and flying mammals

Dentition in mammals.

Text Books:

1. Jordan E. L. and P.S. Verma 2013. Chordate Zoology. S. Chand and co., New Delhi.
2. Kotpal R.L. 2017. Chordata and Comparative Anatomy, Rastogi publication, Meerut

Reference Books:

1. Ekambaranatha Ayyar, M and T.N Anantha Krishnan 1992, A manual of zoology Vol. II [Chordata]. S. Viswanathan [Printers and publishers] Pvt. Ltd., Madras.
2. Nigam.H.C 1983 Zoology of chordates, Vishal publications, Jalandhar.
3. Waterman, Allyn J. et. al. 1971., Chordate Structure and functions, Mac. Millan and co., New York.
4. Jollie. M. 1968. Chordate Morphology. East west press Pvt. Ltd., New Delhi.
5. Hyman.L.H. 1979. Comparative Vertebrate Zoology. McGraw Hill co. New York.

e-Resources

1. [https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Introductory Biology \(CK-12\)/12%3A_Vertebrates/12.01%3A_Chordates](https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Introductory_Biology_(CK-12)/12%3A_Vertebrates/12.01%3A_Chordates)
2. <https://www.uou.ac.in/sites/default/files/slm/BSCZO-201.pdf>
3. <https://compete.etutor.co/neet/resource/1st-year/biology/animal-kingdom/chordates-up-to-class-level>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	3	3	3	3	3	3	2	2	2.8
CO2	3	3	3	3	3	3	3	3	2	2	2.8
CO3	3	3	3	3	3	3	3	3	2	2	2.8
CO4	3	3	3	3	3	3	3	3	3	3	3.0
CO5	3	3	3	3	3	3	3	3	2	1	2.7
Mean Overall Score											2.8

3 - Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
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C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>CC Practical</i>	<i>U24MZLP21</i>	PRACTICAL – II CHORDATA	<i>45</i>	<i>3</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives: To equip students with the required knowledge to identify and dissect the various chordate systems

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Recall the structures and distinct features of phylum Chordata	K1
CO2	Compare the characteristic features of each subphylum and class	K2
CO3	Relate the structure of various internal organs in different classes of vertebrates	K3
CO4	Point out the classification, adaptations and affinities of chordate animals	K4
CO5	Analyze locally available chordate phyla	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Major Dissections (Hands-on):

Fish: External Features, Digestive system

Major Dissections (Demo):

Fish; Arterial System, Venous System, Male and female urogenital system.

Frog: Digestive system, Arterial System, Venous System, Male and female urogenital system.

Mounting: Fish: Placoid and Ctenoid scales, Frog: Hyoid apparatus and Brain (Demo).

Osteology: Frog: Skull and lower jaw, Vertebral column, Pectoral girdle, Pelvic girdle, Fore limb, Hind limb. Pigeon - skull and lower jaw, synsacrum.

Specimen and Slides:

(i) Hemichordata: Balanoglossus

(ii). Protochordata: Amphioxus

(iii). Cyclostomata: Petromyzon, Ammocoetes larva

(iv). Pisces: Sphyrna, Channa, Hippocampus, Exocoetus, Echeneis, Labeo, Catla, Anguilla,
Scales: Placoid, Cycloid, Ctenoid

(v). Amphibia: Ichthyophis, Hyla, Rachophous, Bufo, Rana, Axolotl larva

(vi). Reptilia: Draco, Chameleon, Naja, Bungarus, Testudo, Crocodilus

(vii). Aves: Archaeopteryx, Psittacula, Bubo, Columba, Corvus, Pavo; Collection and study of different types of feathers: Quill, Contour, Filoplume

(viii). Mammalia: Ornithorhynchus, Pteropus, Manis, Hedgehog

Embryology: Stages in the development of Amphioxus, Frog and Chick- Placenta in sharks and mammals.

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Text Books

(Latest Editions)

- 1 Lal S S, 2009. Practical Zoology Vertebrate, Rajpal and Sons Publishing, 484pp.
- 2 Verma P.S, 2000. A Manual of Practical Zoology: Chordates, S. Chand Limited, 627pp.

References Books

- 1 Robert William Hegner, 2015. Practical Zoology, Biblio Life, 522pp.
- 2 Young, J. Z., 1972. The life of vertebrates. Oxford Uni. London.

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	3	3	3	3	3	3	2	2	2.8
CO2	3	3	3	3	3	3	3	3	2	2	2.8
CO3	3	3	3	3	3	3	3	3	2	2	2.8
CO4	3	3	3	3	3	3	3	3	3	3	3.0
CO5	3	3	3	3	3	3	3	3	2	1	2.7
Mean Overall Score											2.8

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Dr. R. Ajaz Haja Mohideen	Dr. R. Rafi Mohamed

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
II	ISEC Theory	U24SZL201	AQUARIUM KEEPING (SBS - II)	30	2	25	75	100

Objectives: To create knowledge on self-employment opportunity of Aquarium fishes

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Define aquarium keeping as a self-employable and commercial venture	K1
CO2	Describe the morphology of aquarium fishes	K2
CO3	Explain the maintenance of an aquarium	K3
CO4	Distinguish the technique of breeding various fishes	K4
CO5	Summarize the aquarium fish pathology	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Unit – I (6 Hours)

Introduction and scope - Aquarium fish keeping as a hobby and cottage industry. Commercial aspects like national and international markets. Self-employment opportunities.

Unit – II (6 Hours)

External morphology of a typical fish. Exotic and endemic varieties of ornamental fishes.

Unit – III (6 Hours)

Aquarium preparation and maintenance - Kinds of tanks, tank setting, biological filter and aeration, water management, planting, lighting and feeds. Budget for setting up an Aquarium Fish Farm as a Cottage Industry

Unit – IV (6 Hours)

Live fish transport- handling, feeding and forwarding techniques of fish. Fish Diseases and their control.

Unit – V (6 Hours)

Breeding – Common characters and sexual dimorphism of Freshwater and Marine aquarium ornamental fish varieties such as Guppies, Mollies, Swordtails, Platy, Siamese fighters and Goldfish, Butterfly fish, blue morph and Anemone fish.

Text Books:

1. Santhanam, P., Sukumaran, N. & P. Natarajan, A manual of freshwater aquaculture (1987), Reprint 1999, Oxford & IBH Publishing Company Pvt., Ltd., New Delhi.
2. Cliff Harrison, A colour guide to Tropical Fish (1980), Chartwell Books, INC, Cerkshire, printed in Hon Kong.

Reference Books:

1. O'Connell, R. F., The freshwater aquarium (1977), Arco Publishing Company, INC New York.
2. Jingran V.G., 1991: Fish and Fisheries in India – Hindustan Publ.co. New Delhi
3. Mill Dick, 1993: Aquarium Fish, Daya Pub.co., New Delhi

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e-Resources:

https://cifa.nic.in/sites/default/files/Ornamental_fish.pdf

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	3	3	3	3	3	3	2	2	2.8
CO2	3	3	3	3	3	3	3	3	2	2	2.8
CO3	3	3	3	3	3	3	3	3	2	2	2.8
CO4	3	3	3	3	3	3	3	3	3	3	3.0
CO5	3	3	3	3	3	3	3	3	2	1	2.7
Mean Overall Score											2.8

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Dr. R. Rafi Mohamed	Dr. R. Rafi Mohamed

C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

Sem	Category	Course Code	Course Title	Hours	Credits	Int. Marks	Ext. Marks	Max. Marks
II	DSSEC Theory	U24SZL202	BASICS OF ORNITHOLOGY (SBS - III)	30	2	25	75	100

Objectives: To equip students with the required knowledge to understand the taxonomic position and role played by birds in the ecosystem, their importance to humans and their evolution and conservation

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Recall the taxonomic position of birds and their importance in the environment	K1
CO2	Differentiate birds based on their morphology, feeding and habitat	K2
CO3	Illustrate the external and internal parts of the birds	K3
CO4	Compare adaptation of birds in various environments	K4
CO5	Analyze case studies relating to bird conservation	K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Unit – I

(6 Hours)

Introduction to Ornithology; Bird Lore; Birds and Humans; Classification of Birds, Bird Evolution, Endemism

Unit – II

(6 Hours)

External Morphology of the Bird; Structure of bird feather, Internal Structure of the Bird; Adaptations to Flight

Unit – III

(6 Hours)

Bird Behaviour: Foraging, Roosting, Vocalization, Imprinting, Feather care, Bird Intelligence, Social Behaviour, Mixed Species Flocks, Migration

Unit – IV

(6 Hours)

Breeding Biology: Sexual dimorphism; territoriality, courtship and display behavior, nesting, eggs, incubation and care of young, brood parasitism

Unit – V

(6 Hours)

Studying bird populations and communities, Sampling methods; Avian Disease; Citizen Science and Ornithology; Threats faced by birds; Bird Conservation.

Text Books:

1. Gill, F.B, and Prum, R.O. (2019). *Ornithology*, 4th ed. Macmillan.

Reference Books:

1. Lovette, I.J and Fitzpatrick, J.W. (2016). *Handbook of Bird Biology*, 3rd ed. Wiley.

2. Birkhead, T. (2013). *Bird Sense: What it's like to be a bird?* Bloomsbury, NY.

3. Birkhead, T., Wimpenny, J., and Montgomerie, B. (2014). *Ten Thousand Birds:*

4. *Ornithology since Darwin*. Princeton University Press, Princeton, NJ.

C. Abdul Hakeem College (Autonomous), Melvisharam.

e-Resources

https://elearning.icar.gov.in/DisplayUG_ECoursesContent.aspx?CourseCode=YIJ83DV21dD1MSCEWcDRJg==

https://onlinecourses.nptel.ac.in/noc22_ge10/preview

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	3	3	3	3	3	3	2	2	2.8
CO2	3	3	3	3	3	3	3	3	2	2	2.8
CO3	3	3	3	3	3	3	3	3	2	2	2.8
CO4	3	3	3	3	3	3	3	3	3	3	3.0
CO5	3	3	3	3	3	3	3	3	2	1	2.7
Mean Overall Score											2.8

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
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C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>I</i>	<i>GEL</i>	<i>U24ABY101</i>	<i>BOTANY - I (ALLIED)</i>	<i>60</i>	<i>4</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives: To acquire basic knowledge on vascular and non-vascular organism with examples.

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Increase the awareness and appreciation of human friendly algae and their economic importance	K1
CO2	Develop an understanding of microbes and fungi and appreciate their adaptive strategies	K2
CO3	Develop critical understanding on morphology, anatomy and reproduction of Bryophytes, Pteridophytes and Gymnosperms	K2, K3
CO4	Compare and analyze the structure and function of cells and explain the development of cells	K4
CO5	Understand the core concepts and fundamentals of plant biotechnology and genetic engineering	K2, K5

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

Unit – I Algae

General characters of algae – Structure, reproduction and life cycle of the following genera – *Anabaena*, *Spirulina* and *Sargassum* and economic importance of algae.

Unit – II Fungi, Bacteria and Virus

General characteristics of fungi, structure, reproduction and life cycle of the following genera - *Penicillium* and *Agaricus* and economic importance of fungi. Bacteria - general characters, structure and reproduction of *Escherichia coli* and economic importance of bacteria. Virus - general characters, structure of TMV, structure of bacteriophage.

Unit – III Bryophytes, Pteridophytes and Gymnosperms

General characteristics of Bryophytes, Structure and life cycle of *Funaria*. General characteristics of Pteridophytes, Structure and life cycle of *Lycopodium*. General characters of Gymnosperms, Structure and life cycle of *Cycas*.

Unit – IV Cell Biology

Prokaryotic and Eukaryotic cell- structure /organization. Cell organelles - ultra structure and function of chloroplast, mitochondria and nucleus. Cell division - mitosis.

Unit – V Genetics and Plant Biotechnology

Mendelism - Law of dominance, Law of segregation, Law of independent assortment. Monohybrid and dihybrid cross - Test cross - Back cross. Plant tissue culture - *In vitro* culture methods. Principle and its application in biotechnology.

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In vitro culture methods - Self Study Component for Seminar/Assignment:

(Questions should not be asked from self study component in the End Semester Examinations)

Text Books:

1. Singh, V., Pande, P.C and Jain, D.K. 2021. A Text Book of Botany. Rastogi Publications, Meerut.
2. Bhatnagar, S.P and Alok Moitra. 2020. Gymnosperms, New Age International (P) Ltd., Publishers, Bengaluru.
3. Sharma, O.P. 2017. Bryophyta, MacMillan India Ltd. Delhi.
4. Verma, V. (2007): Text book of Plant Physiology, Ane Books India, New Delhi.

Reference Books:

1. Rao, K., Krishnamurthy, K.V and Rao, G.S. 1979. Ancillary Botany, S. Viswanathan Pvt. Ltd., Madras.
2. Lee, R.E. 2008. Phycology, IV Edition, Cambridge University Press, New Delhi.
3. Jain, V.K. 2006. Fundamentals of Plant Physiology, S.Chand and Company Ltd., New Delhi.

e-Resources

1. <https://www.kobo.com/us/en/ebook/the-algae-world>
2. [http://www.freebookcentre.net/biology-books-download/Fungi-\(PDF-15P\).html](http://www.freebookcentre.net/biology-books-download/Fungi-(PDF-15P).html)
3. <http://scitec.uwichill.edu.bb/bcs/bl14apl/bryo1.htm>
4. <https://www.toppr.com/guides/biology/plant-kingdom/pteridophytes/>
5. <https://arboretum.harvard.edu/wp-content/uploads/2013-70-4-beyond-pine-cones-an-introduction-to-gymnosperms.pdf>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	3	1	1	3	2	3	1	3	2.2
CO2	2	2	3	1	3	3	1	3	2	3	2.3
CO3	2	3	1	3	3	1	3	3	2	1	2.1
CO4	3	2	2	3	3	2	2	2	2	3	2.3
CO5	3	2	2	2	2	2	2	1	2	2	2.0
Mean Overall Score											2.1

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
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C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>GEL</i>	<i>U24ABY201</i>	<i>BOTANY - II (Allied)</i>	<i>60</i>	<i>4</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives: To acquire basic knowledge on plant taxonomy, physiology, embryology and plant biotechnology

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	Understand the fundamental concepts and principles of plant systematics.	K1
CO2	Analyze and recognize the importance of plant anatomy in plant production systems.	K2
CO3	Understand the mechanism underlying the shift from vegetative to reproductive phase.	K2, K3
CO4	Elaborate the process of photosynthesis and respiration in plant body	K2, K4
CO5	Classify plant systematics and recognize the importance of herbarium.	K4

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

Unit – I MORPHOLOGY OF FLOWERING PLANTS

Plant and its parts. Structure and function of root and stem. Leaf and its parts. Leaf types- simple and compound. Phyllotaxy and types. Inflorescence - Racemose, Cymose and Special types. Terminology with reference to flower description.

Unit – II TAXONOMY

Study of the range of characters and plants of economic importance in the following families: Rutaceae, Caesalpinaceae, Annonaceae, Euphorbiaceae and Apocyanaceae

Unit – III ANATOMY

Meristem: Types of meristem based on position. Tissue and tissue systems: Simple (parenchyma, chlorenchyma, sclerenchyma) and complex tissues (xylem, phloem, cambium). Anatomy of monocot and dicot roots - anatomy of monocot and dicot stems - anatomy of dicot and monocot leaves.

Unit – IV EMBRYOLOGY

Structure of mature anther and ovule - Types of ovules, structure of embryo sac, pollination - double fertilization, structure of dicotyledonous and monocotyledonous seeds.

Unit – V PLANT PHYSIOLOGY

Absorption of water, photosynthesis - light reaction - Calvin cycle; respiration - Glycolysis - Krebs cycle - electron transport system. Growth hormones - auxins and cytokinins and their applications.

Terminology with reference to flower description.. Phyllotaxy and its type - Self Study Component for Seminar/Assignment:

(Questions should not be asked from self study component in the End Semester Examinations)

C. Abdul Hakeem College (Autonomous), Melvisharam.

Text Books:

1. Sharma, O.P. 2017. Plant Taxonomy. (II Edition). The McGraw Hill Companies.
2. Bhojwani, S.S. Bhatnagar, S.P and Dantu, P.K. 2015. The Embryology of Angiosperms (6th revised and enlarged edition). Vikas Publishing House, New Delhi.
3. Maheshwari, P. 1963. Recent Advances in Embryology of Angiosperms. Intl. Soc. Plant Morphologists, New Delhi.
4. Salisbury, F. B.C.W. Ross. 1991. Plant Physiology. Wassworth Pub. Co. Belmont.

Reference Books:

1. Pandey, B.P. 2012. Plant Anatomy. S Chand Publishing.
2. Jain, VK. 2006. Fundamentals of Plant Physiology, S. Chand and Company Ltd.
3. Rajni Gupta. 2012. Plant Taxonomy: Past, Present and Future. Vedams (P) Ltd. New Delhi.

e-Resources

4. https://books.google.co.in/books/about/Plant_Taxonomy.html?id=0bYs8F0Mb9gC&redir_esc=y
5. https://books.google.co.in/books/about/PLANT_TAXONOMY_2E.html?id=Roi0lwSXFuUC&redir_esc=y
6. <https://archive.org/EXPERIMENTS/plantanatomy031773mbp>
7. <https://www.amazon.in/Embryology-Angiosperms-6th-S-P-Bhatnagar-ebook/dp/B00UN5KPQG>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	3	3	2	1	1	3	2	1	2.2
CO2	3	3	1	3	3	2	3	2	1	2	2.2
CO3	3	3	1	3	2	1	3	2	3	2	2.1
CO4	3	1	2	1	3	3	3	2	2	2	2.2
CO5	3	2	2	2	2	2	2	1	2	3	2.1
Mean Overall Score											2.2

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
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C. Abdul Hakeem College (Autonomous), Melvisharam.

Syllabus for B.Sc., Zoology effective from the year 2024-2025

<i>Sem</i>	<i>Category</i>	<i>Course Code</i>	<i>Course Title</i>	<i>Hours</i>	<i>Credits</i>	<i>Int. Marks</i>	<i>Ext. Marks</i>	<i>Max. Marks</i>
<i>II</i>	<i>GEL</i>	<i>U24ABYP21</i>	<i>ALLIED PRACTICAL - BOTANY</i>	<i>30</i>	<i>2</i>	<i>25</i>	<i>75</i>	<i>100</i>

Objectives: Practicals pertaining to above subjects is important to get knowledge on various aspects of plants.

Course Outcomes (COs) and Cognitive Level Mapping:

COs	CO Statement (After completing the course, the students will be able to)	Cognitive Level
CO1	To study the internal organization of algae and fungi.	K1
CO2	Develop critical understanding on morphology, anatomy and reproduction of Bryophytes, Pteridophytes and Gymnosperms..	K1, K2
CO3	To study the classical taxonomy with reference to different parameters.	K3
CO4	Understand the fundamental concepts of plant anatomy and embryology	K2, K4
CO5	To study the effect of various physical factors on photosynthesis.	K4

Cognitive Levels (K1-Remember; K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create)

Syllabus:

1. Make suitable micro preparation of the types prescribed in Algae, Fungi, Bryophytes, Pteridophytes and Gymnosperms.
2. Micro photographs of the cell organelles - ultra structure.
3. Simple genetic problems- Monohybrid cross, dihybrid cross, test cross and back cross
4. To describe in technical terms, plants belonging to any of the family prescribes and to identify the family.
5. To dissect a flower, construct floral diagram and write floral formula.
6. Demonstration experiments
 1. Photosynthesis
 2. Osmosis
7. To make suitable micro preparations of anatomy materials prescribed in the syllabus.
8. Spotters - Algae, Fungi, Bryophytes, Pteridophytes, Gymnosperms and Angiosperm anatomy, Embryology, Cell biology and Biotechnology.

_____ # Self Study Component for Seminar/Assignment:

(Questions should not be asked from self study component in the End Semester Examinations)

Text Books:

1. Sharma, O.P. 2017. Bryophyta, MacMillan India Ltd, New Delhi.
2. Sharma, O.P. 2012. Pteridophyta, Tata McGraw-Hills Ltd, New Delhi.
3. Subramaniam, N.S. 1996. Laboratory Manual of Plant Taxonomy. Vikas Publishing House Pvt. Ltd., New Delhi.
4. Benjamin, A. Pierce. 2012. Genetics- A conceptual Approach. W.H. Freeman and Company, New York, England.

C. Abdul Hakeem College (Autonomous), Melvisharam.

Reference Books:

1. Strickberger, M.W. 2005. Genetics (III Ed). Prentice Hall, New Delhi, India.
2. Nancy Serediak and M. Huynh. 2011. Algae identification lab Guide. Accompanying manual to algae identification field guide, Ottawa Agriculture and Agri food Canada publisher.
3. Mohammed Gufran Khan, Shite Gatew and Bedilu Bekele. 2012. Practical manual for Bryophytes and Pteridophytes. Lambert Academic Publishing.
4. Aler Gingauz. 2001. Medicinal Chemistry. Oxford University Press & Wiley Publications.
5. Steward, F.C. 2012. Plant Physiology Academic Press, US

e-Resources

1. 4. <https://www.amazon.in/Practical-Manual-Pteridophyta-Rajan-Sundara/dp/8126106883>
2. <https://www.google.co.in/books/edition/Gymnosperms/3YrT5E3Erm8C?hl=en&gbpv=1&dq=gy mnosperms&printsec=frontcover>
3. <https://www.amazon.in/Computational-Phytochemistry-Satyajit-Dey-Sarker-ebook/dp/B07CV96NZJ>
4. <https://medlineplus.gov/genetocs/understanding/basics/cell/>
5. <https://apan.net/meetings/apan45/files/17/17-01-01-01.pdf>

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) and Programme Specific Outcomes (PSOs)

COs	Programme Outcomes					Programme Specific Outcomes					Mean
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	3	2	3	2	2	3	3	1	2.4
CO2	3	1	3	2	3	3	1	2	3	2	2.2
CO3	2	1	3	3	2	1	3	3	1	1	2.0
CO4	3	3	2	3	3	2	2	2	3	1	2.5
CO5	3	2	2	2	3	2	3	1	2	3	2.3
Mean Overall Score											2.2

3 – Strong; 2 – Medium; 1 – Low

Prepared by	Verified by
Dr. A. Akbar	Dr. A. Akbar